

Docket No. HY 1111.02 US
USSN: 10/506,941

PATENT
Art Unit: 2876

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

Claim 1: (Original) A diffractive storage system for recording information on a diffractive optics memory, comprising:

a coherent light source split to form an object beam and a corresponding reference beam, an optical axis being defined by said object beam being aligned perpendicular to a plane of said memory;

a steering mirror configured to direct said reference beam received from said coherent light source;

a first plurality of mirrors arranged around one side of said optical axis receiving said reference beam from said steering mirror and directing said reference beam at a first angle of a plurality of first angles towards said memory; and

a second plurality of mirrors arranged around the symmetrical side of said optical axis receiving said reference beam from said steering mirror and directing said reference beam at a second angle of a plurality of second angles towards said memory, said first angle being identical in value to said second angle but formed on the symmetrical side of said optical axis.

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Claim 2: (Original) The diffractive storage system of claim 1, wherein said memory comprises a polypeptide plate on which data is recorded.

Claim 3: (Original) The diffractive storage system of claim 1, wherein said steering mirror is a rotating mirror.

Claim 4: (Original) The diffractive storage system of claim 1, wherein said steering mirror is a Micro Opto Electro Mechanical System.

Claim 5: (Original) The diffractive storage system of claim 1, further comprising:

said memory comprising a plurality of points storing information therein, said object beam and said reference beam interfering at said first angle to form a first sub-hologram at one of said points of said memory and said reference beam interfering with said object beam at said second angle to form a second sub-hologram at said point.

Claim 6: (Original) The diffractive storage system of claim 1, wherein said steering mirror is located on said optical axis directing said reference beam to one of said plurality of mirrors.

Claim 7: (Original) The diffractive storage system of claim 1, wherein said memory is made of a polypeptide material.

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Claim 8: (Original) The diffractive storage system of claim 1, wherein said object beam has modulated thereon a plurality of pixels.

Claim 9: (Original) A diffractive storage method for recording information on a diffractive optics memory, comprising the steps of:

forming an object beam and a reference beam coherent with said object beam, an optical axis being defined by said object beam being aligned perpendicular to a plane of said memory;

directing said reference beam at a first angle of a first plurality of angles towards said memory by a first plurality of mirrors arranged around one side of said optical axis; and

directing said reference beam at a second angle of a second plurality of angles towards said memory by a second plurality of mirrors arranged around the symmetrical side of said optical axis, said first angle being identical to said second angle but formed on the symmetrical side of said optical axis.

Claim 10: (Original). The diffractive storage method of claim 9, further comprising:

said memory wherein said object beam and said reference beam interfere at said first angle to form a first sub-hologram at said point of said memory and said reference beam interferes with said object beam at said second angle to form a second sub-hologram at said point.

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Claim 11: (Original) The diffractive storage method of claim 9, further comprising a MEOMS which directs said reference beam to one of said plurality of mirrors.

Claim 12: (Original) The diffractive storage method of claim 9, wherein said memory is made of a polypeptide material.

Claim 13: (Original) The diffractive storage method of claim 9, wherein said object beam has modulated thereon a plurality of pixels.

Claim 14: (Original) A diffractive storage system for reading information from a diffractive optics memory having a plurality of points, comprising:

- a coherent light source forming a reference beam, an optical axis being defined by said reference beam being aligned perpendicular to a plane of said memory;

- a steering mirror configured to direct said reference beam received from said coherent light source to said memory;

- a first plurality of mirrors arranged around one side of said optical axis receiving said reference beam from said steering mirror and directing said reference beam at a first angle of a plurality of first angles towards one of said points of said memory; and

- a second plurality of mirrors arranged around the symmetrical side of said optical axis receiving said reference beam from said steering mirror and directing

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said reference beam at a second angle of a plurality of second angles towards said one of said points of said memory, said first angle being the same value as said second angle but formed on the symmetrical side of said optical axis.

Claim 15: (Original) The diffractive storage system of claim 14, wherein said steering mirror is a Micro Opto Electro Mechanical System.

Claim 16. (Original) The diffractive storage system of claim 14, wherein said steering mirror is located on said optical axis directing said reference beam to one of said plurality of mirrors.

Claim 17: (Original) The diffractive storage system of claim 14, wherein said memory is made of a polypeptide material.

Claim 18: (Original) The diffractive storage system of claim 14, further comprising:

an array of light sensitive elements configured to detect a first reconstruction beam of a first packet of information at said point of said memory illuminated with said reference beam and to detect a second reconstruction beam of a second packet of information at said point of said memory illuminated with said reference beam

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Claim 19: (Original) A diffractive storage method for reading information from a diffractive optics memory, comprising the steps of:

directing a reference beam at a first angle of a first plurality of angles towards a first plurality of mirrors arranged around one side of an optical axis, said optical axis defined by said reference beam perpendicular to said memory;

reconstructing a first packet of information at a point of said memory with said reference beam;

directing said reference beam at a second angle of a second plurality of angles towards a second plurality of mirrors, said first angle being identical in value and symmetrical about said optical axis to said second angle; and

reconstructing a second packet of information at said point of said memory with said reference beam.

Claim 20: (Original) The diffractive storage method of claim 19, wherein said memory is made of a polypeptide material.